Proxy Design Pattern

Description

The proxy design pattern is a class functioning as an interface to another class or object.

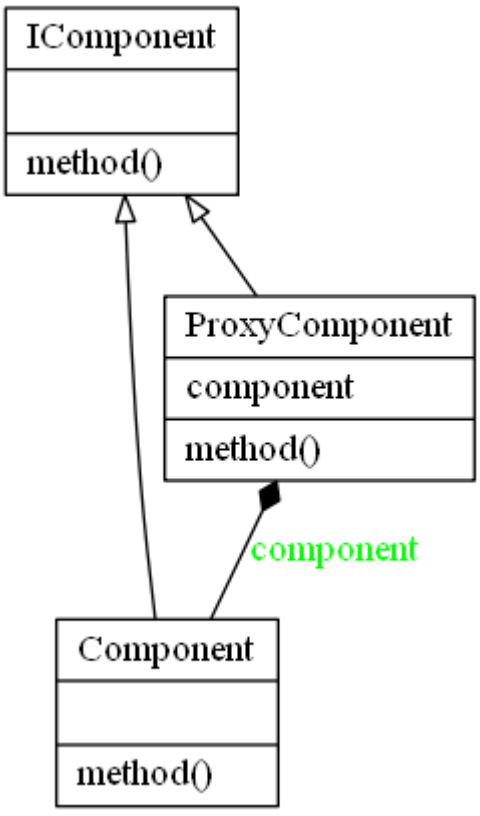
A proxy could be for anything, such as a network connection, an object in memory, a file, or anything else you need to provide an abstraction between.

It is a wrapper called by a client to access the real underlying object.

Additional functionality can be provided at in the proxy abstraction if required. eg, caching, authorization, validation, lazy initialization, logging.

The proxy should implement the subject interface as much as practicable so that the proxy and subject appear identical to the client.

The Proxy Pattern may occasionally also be referred to as Monkey Patching or Object Augmentation



Source Code

proxy.py

```
from abc import ABCMeta, abstractmethod
import datetime
```

```
class IComponent(metaclass=ABCMeta):
    @staticmethod
    @abstractmethod
    def method(self):
        """A method to implement"""


class Component(IComponent):
    def method(self):
        print("The method has been called")


class ProxyComponent(IComponent):
    def __init__(self):
        self.component = Component()

    def method(self):
        f = open("log.txt", "a")
        f.write("%s : method was proxied\n" % (datetime.datetime.now()))
        self.component.method()


COMPONENT1 = Component()
COMPONENT1.method()

COMPONENT2 = ProxyComponent()
COMPONENT2.method()
```

